

## **From Short Lifetimes to Increased Availability with Compressor Revamp**

21 September 2023

**A global chemicals company operating two vertical Process Gas Compressors faced significant challenges including high leakages, reduced gas flow, temperature issues, and a short wear lifetime of parts. These problems led to frequent compressor shutdowns and wasteful energy consumption. A system integrity analysis by Burckhardt Compression identified inappropriate materials and designs as the root cause of all problems.**

The two compressors were operated in parallel without any standby compressors as a back-up. The company was experiencing unexpected compressor shutdowns, decreasing output, high maintenance costs, challenging dry-running applications, high leakages, reduced gas flow, and temperature issues. Burckhardt Compression's team of experts conducted a complete compressor system integrity analysis onsite, which showed that the cylinder liner was damaged due to inappropriate piston ring material.

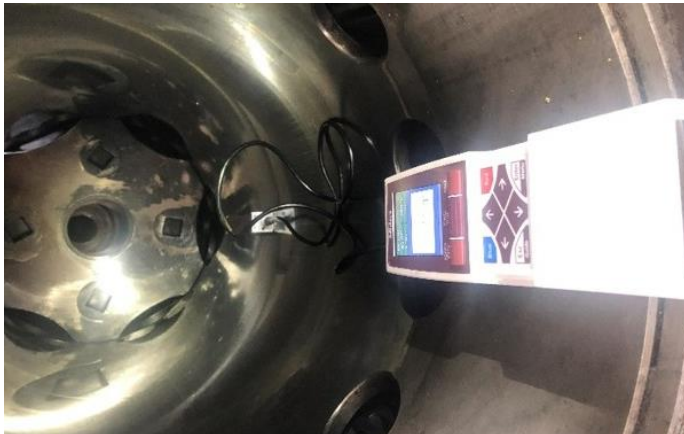
Burckhardt Compression's solution included upgrading the piston/packing rings to Persisto® 850, a material that has been specially developed for sealing applications in dry-running reciprocating compressors. The piston rod was repaired, applying proper coating material and roughness, and all other components were refurbished at Burckhardt Compression's local service center.

As a result of the solution provided by Burckhardt Compression, energy savings were achieved by avoiding internal losses, and emissions were reduced. Internal leakage was eliminated, and nominal gas flow was restored. There was a substantial increase in wear parts' lifetime, and a reduction in maintenance costs. Burckhardt Compression also had a local expert team on hand for immediate support.

The customer said, "We were struggling with the short lifetimes of the piston rod seals and packing rings. Burckhardt Compression's solution with the right selection of material helped us to increase compressor availability significantly. Thanks to their analysis, we now better understand the component failure modes. Our second compressor, which was plagued by the same issues, is now being revamped by Burckhardt Compression too."

Burckhardt Compression's commitment to providing customized solutions for its customers is evident as its team of experts not only identified the root cause of the problems faced by the chemicals company but also provided a comprehensive solution that resulted in numerous benefits. The chemicals company was able to optimize its energy efficiency, reduce emissions, and increase its profitability, all while enjoying the peace of mind that comes with having a local expert team for immediate support.

**Image captions:**



**Image 1:** Accurate surface roughness is crucial for optimal performance. The investigation revealed that the cylinder liner surface was too smooth.



**Image 2:** The piston and packing rings have been enhanced with Persisto® 850, a material designed specifically for dry-running applications.

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## About Burckhardt Compression

Burckhardt Compression is the worldwide market leader for reciprocating compressor systems and the only manufacturer and service provider that covers a full range of reciprocating compressor technologies and services. Its customized compressor systems are used in the gas gathering and processing, gas transport and storage, refinery, chemical, petrochemical as well as in the industrial gas and hydrogen mobility and energy sectors. Burckhardt Compression's leading technology, broad portfolio of compressor components and the full range of services help customers around the world to find the optimized solution for their reciprocating compressor systems. Since 1844, its highly skilled workforce has crafted superior solutions and set the benchmark in the gas compression industry.

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For further information please visit [www.burckhardtcompression.com](http://www.burckhardtcompression.com)

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